



North Carolina Department of Environment and Natural Resources

Division of Air Quality

Ethylene dibromide

CAS 106-93-4

Current North Carolina AAL = $4 \times 10^{-4} \text{ mg/m}^3$ (annual carcinogen)

AAL Documentation [reconstructed using historical values]

$$\text{Inhalation Unit Risk}^1 (\text{IUR}) = 2.2 \times 10^{-4} \text{ per } \mu\text{g/m}^3$$

The Inhalation Unit Risk Factor was divided by 10 to compensate for animal to human extrapolation.

$$\text{Modified IUR} = \frac{2.2 \times 10^{-4}}{10} = 2.2 \times 10^{-5} \text{ per } \mu\text{g/m}^3$$

Ethylene dibromide is classified as a probable human carcinogen by EPA, Group B2. In accordance with North Carolina guidelines, a 1 in 100,000 risk estimate was used to derive the AAL.

$$\text{Linear Calculation} \quad \frac{1}{2.2 \times 10^{-5} \text{ per } \mu\text{g/m}^3} = \frac{x}{1 \times 10^{-5}}$$

$$x = \frac{1 \times 10^{-5}}{2.2 \times 10^{-5}}$$

$$x = 4 \times 10^{-1} \mu\text{g/m}^3$$

$$\text{AAL for Ethylene dibromide}^2 = 4 \times 10^{-4} \text{ mg/m}^3$$

This information has been reconstructed using the decision matrix established by the North Carolina Academy of Sciences Air Toxics Panel, September, 1986.

Final version- June 2013 (NBI)

¹ The IUR was estimated using a 1992 NTP rat inhalation study as described in an on-line IRIS summary accessed 6/10/2013.

² $1 \mu\text{g/m}^3 = 10^{-3} \text{ mg/m}^3$